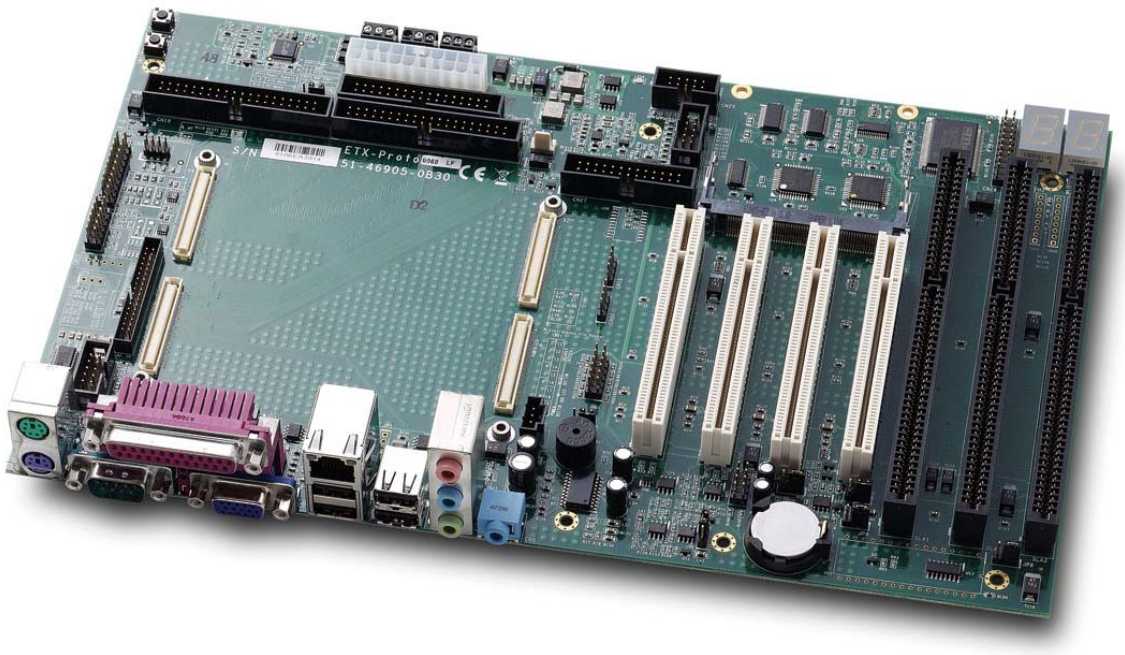
ETX

ETX-Proto

User's Manual



Manual Revision: 2.00

Revision Date: May 18, 2010

Part Number: 50-1J028-1000

ADLINK TECHNOLOGY INC.

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Revision History

Release	Date	Change
1.00	2005/02/01	Initial release
2.00	2010/05/18	Update to PCB version B3

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Preface

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



Additional information, aids, and tips that help users perform tasks.



Information to prevent *minor* physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



Information to prevent *serious* physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

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1 Introduction

The ETX approach of custom carrier combined with off the shelf system core is an excellent solution when you need to customize but lack the time or quantity for a complete redesign. It fits most system integration projects with production volumes from 500 to 10,000 pcs per year. The ETX concept has a great many advantages over full custom designs. It reduces engineering complexity, lowers the threshold for total project quantity and last but not least brings your product to the market in no time. The average time to design a carrier board is less than half the time of a full custom OEM board.

ETX-Proto is a standard ATX size carrier board.Together with the ETX module of your choice and off the shelf add-on cards, you can quickly emulate the functionality of your desired end product for software development and hardware verification.

To build a functional prototype of your target system you will need:

- ETX module
- ETX-Proto
- ISA, PCI or Mini PCI add-on cards
- Storage or Flash disk solution

ETX Proto supports up to 4 PCI add-on cards and 3 ISA cards.

In addtion to the functions on the ETX module, ETX-Proto adds the following:

- Secondary I/O for COM3/4 and LPT2
- Secondary hardware monitor
- PCI based debug display for POST code readout
- I2C based GPIO
- Audio amplifier

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2 Special Functions

2.1 Secondary Super I/O

ETX-Proto uses the SMSC FDC37C669, an ISA based Super I/O chip to provide COM3, COM4, LPT2 and FDD2 in addtion to the primary Super I/O on the ETX module. Support for this secondary I/O is included standard in the BIOS of all ETX modules that support the ISA bus.

2.2 Carrier Hardware Monitor

A W83782D Winbond H/W monitoring IC provides addtional hardware monitor functions. The W83782D can be used to monitor several critical hardware parameters of the system that cannot be monitored by the hardware monitor on the ETX module such as power supply voltages on the carrier board, fan speeds, and system temperatures.

2.3 Integrated Debug Port

ETX-Proto supports an integrated debug port on board. The port 80 function is implemented with two CPLD chips on the PCI bus interface.

2.4 Audio Power Amplifier

The onboard stereo audio power amplifier contains two identical amplifiers capable of delivering 6 W per channel of continuous average power into a 4-W load at 10% THD+N or 5 W per channel at 1% THD+N. The gain of each channel is fixed at 20 dB. The amplifier features a mute/standby function for power-sensitive applications.

2.5 General Purpose I/O

The F75111R is a low power general purpose IO chip providing 20 GPIO.

Most GPIO pins can be programmed to be power LEDs. Level or pulse modes can be programmed by registers. Two power-down modes (Manual or Smart) can be selected to save power and control the total consumption to under 10uA.

The F75111R also includes two sets of watchdog timers. One watchdog timer's timeout unit is set to seconds with a range of 0 to 127 seconds. The other Watchdog timer is set to seconds or minutes and the range is 0 to 256 seconds or minutes.

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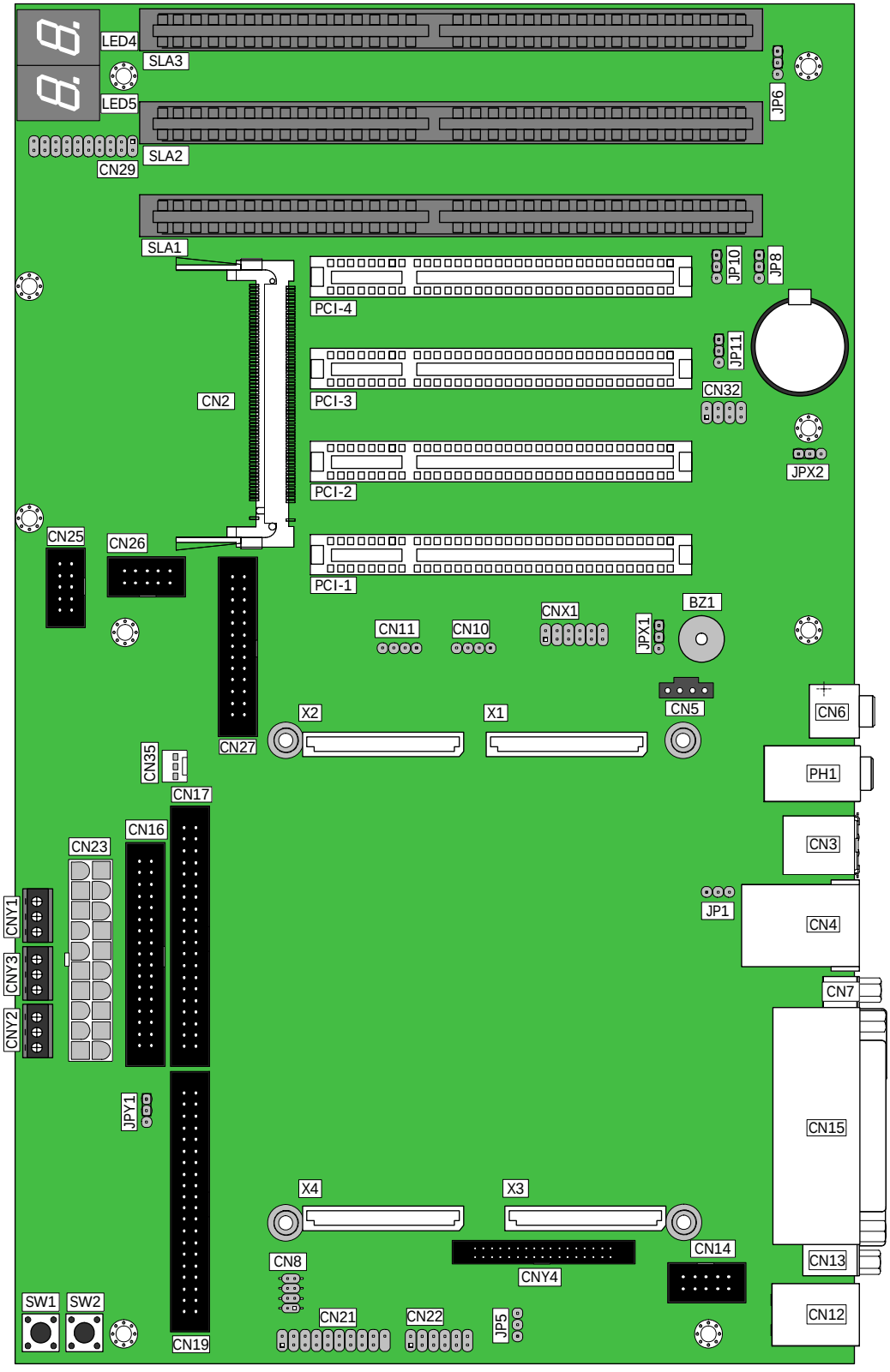
2.6 I2C and SMBus Devices

The SMBus (I2C bus) controller is integrated in the ETX core module. There are several slave devices that reside on the SMBus (I2C bus) of the ETX-Proto. The addresses are as follows:

Address	Device Function	Chipset
00101010	H/W monitor	Winbond W83782D
10011100	GPIO & Watch Dog Timer	Fintek F75111R

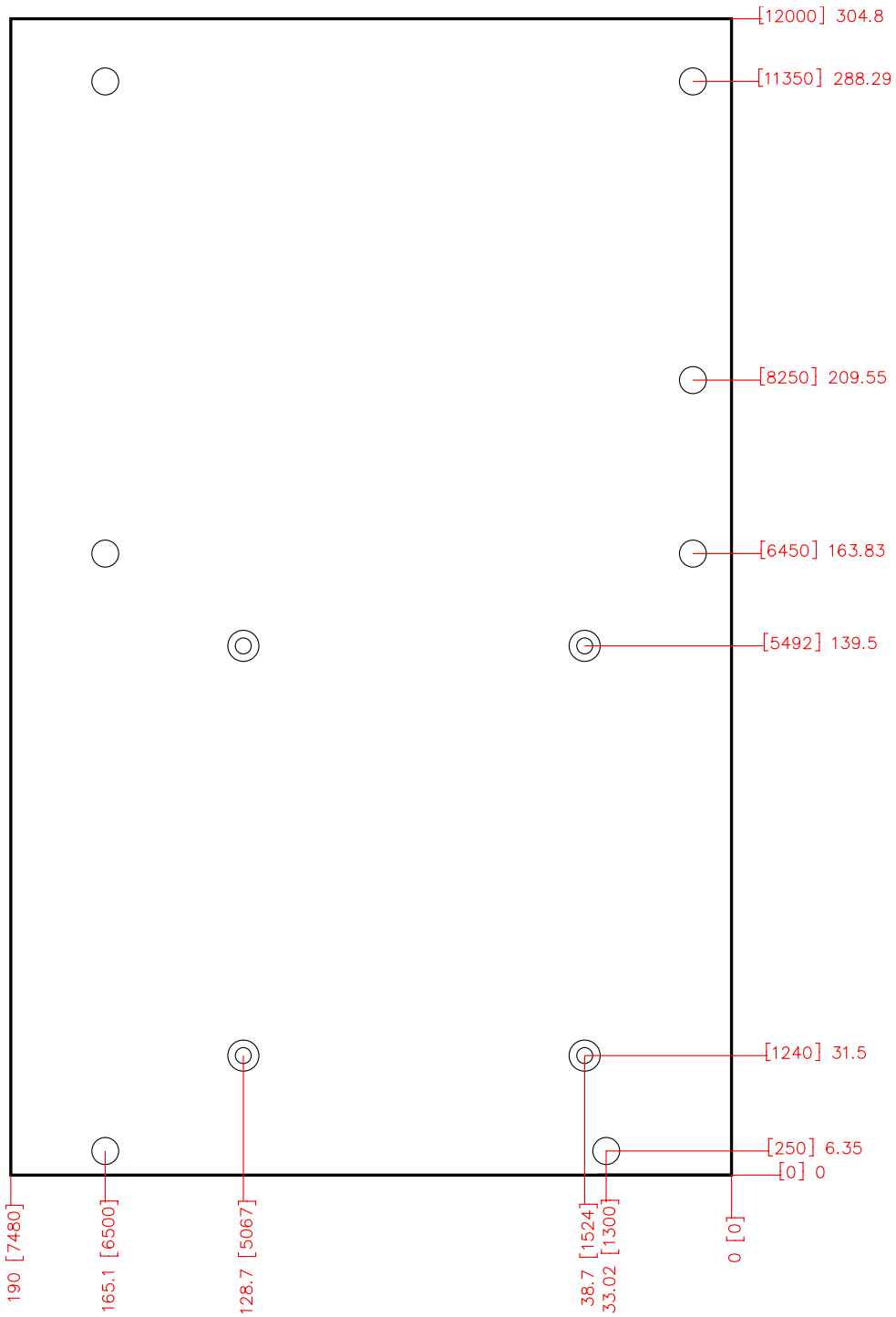
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3 Component Location



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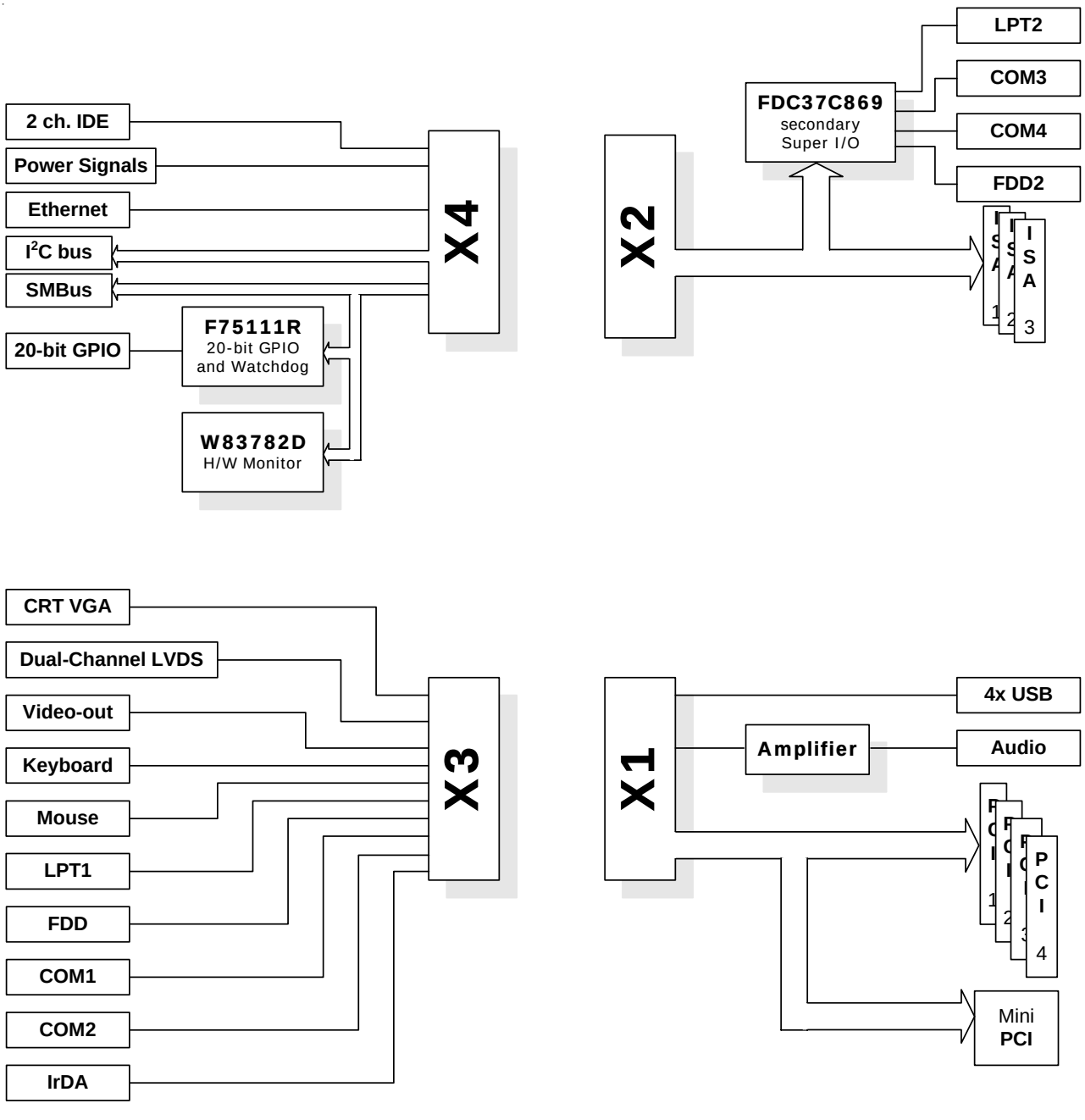
4 Mechanical Dimensions



Dimensions in mm [thou]

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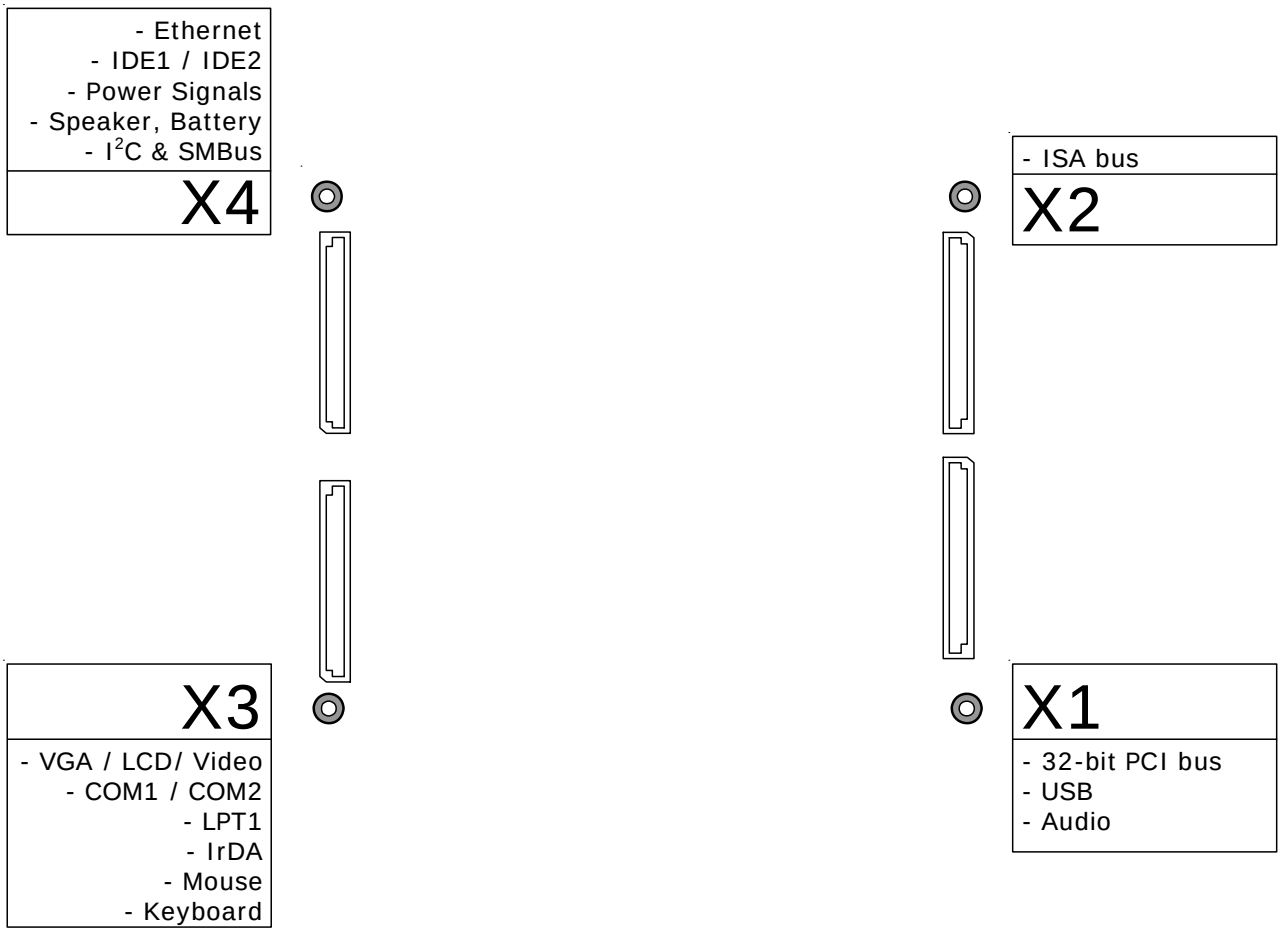
5 Function Diagram



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6 Connectors and Pinouts

6.1 ETX Module Signals



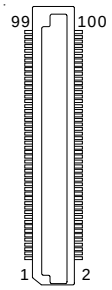
6.2 Pin-Out Compatibillity

All pin-outs on X1, X2, X3 and X4 on the ETX-Proto comply with pin-out and signal description used in the original “ETX Specification ver 2.6”. This document includes a description of pin-outs, signal descriptions and mechanical characteristics of the ETX formfactor.

An addtional document called “ETX Design Guide” is a general introduction to carrier board design for ETX core modules.

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6.3 X1 Connector: PCI-bus, USB and Audio



Signals and Pinout

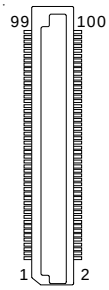
Pin	Signal	Pin	Signal
1	GND	2	GND
3	PCICLK3	4	PCICLK4
5	GND	6	GND
7	PCICLK1	8	PCICLK2
9	REQ3#	10	GNT3#
11	GNT2#	12	3V3
13	REQ2#	14	GNT1#
15	REQ1#	16	3V3
17	GNT0#	18	RESERVED
19	VCC	20	VCC
21	SERIRQ	22	REQ0#
23	AD0	24	3V3
25	AD1	26	AD2
27	AD4	28	AD3
29	AD6	30	AD5
31	C/BE0#	32	AD7
33	AD8	34	AD9
35	GND	36	GND
37	AD10	38	LINEIN_L
39	AD11	40	MICIN
41	AD12	42	LINEIN_R
43	AD13	44	AVCC
45	AD14	46	LINEOUT_L
47	AD15	48	AGND
49	C/BE1#	50	LINEOUT_R

Pin	Signal	Pin	Signal
51	VCC	52	VCC
53	PAR	54	SERR#
55	PERR#	56	RESERVED
57	PME#	58	USB2-
59	LOCK#	60	DEVSEL#
61	TRDY#	62	USB3-
63	IRDY#	64	STOP#
65	FRAME#	66	USB2+
67	GND	68	GND
69	AD16	70	C/BE2#
71	AD17	72	USB3+
73	AD19	74	AD18
75	AD20	76	USB0-
77	AD22	78	AD21
79	AD23	80	USB1-
81	AD24	82	C/BE3#
83	VCC	84	VCC
85	AD25	86	AD26
87	AD28	88	USB0+
89	AD27	90	AD29
91	AD30	92	USB1+
93	PCIRST#	94	AD31
95	INTC#	96	INTD#
97	INTA#	98	INTB#
99	GND	100	GND

(1) Pins 12, 16, 24 are for 3.3 V power output, with combined capacity of 500 mA

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6.4 X2 Connector: ISA Bus



Signals and Pinout

Pin	Signal	Pin	Signal
1	GND	2	GND
3	SD14	4	SD15
5	SD13	6	MASTER#
7	SD12	8	DREQ7
9	SD11	10	DACK7#
11	SD10	12	DREQ6
13	SD9	14	DACK6#
15	SD8	16	DREQ5
17	MEMW#	18	DACK5#
19	MEMR#	20	DREQ0
21	LA17	22	DACK0#
23	LA18	24	IRQ14
25	LA19	26	IRQ15
27	LA20	28	IRQ12(1)
29	LA21	30	IRQ11
31	LA22	32	IRQ10
33	LA23	34	IO16#
35	GND	36	GND
37	SBHE#	38	M16#
39	SA0	40	OSC
41	SA1	42	BALE
43	SA2	44	TC
45	SA3	46	DACK2#(2)
47	SA4	48	IRQ3
49	SA5	50	IRQ4

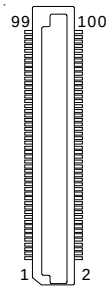
Pin	Signal	Pin	Signal
51	VCC	52	VCC
53	SA6	54	IRQ5
55	SA7	56	IRQ6
57	SA8	58	IRQ7
59	SA9	60	SYSCLK
61	SA10	62	REFSH#
63	SA11	64	DREQ1
65	SA12	66	DACK1#
67	GND	68	GND
69	SA13	70	DREQ3
71	SA14	72	DACK3#
73	SA15	74	IOR#
75	SA16	76	IOW#
77	SA18	78	SA17
79	SA19	80	SMEMR#
81	IOCHRDY	82	AEN
83	VCC	84	VCC
85	SD0	86	SMEMW#
87	SD2	88	SD1
89	SD3	90	NOWS#
91	DREQ2(2)	92	SD4
93	SD5	94	IRQ9
95	SD6	96	SD7
97	IOCHK#	98	RSTDRV
99	GND	100	GND

(1) IRQ12 is reserved for PS/2 mouse; this pin is NC on the ETX-EV133.

(2) DREQ2/DACK2# is reserved for FDD controller; these pins are NC on ETX-EV133.

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6.5 X3 Connector: CRT, LCD, Video, COM1/2, LPT1, IrDA, Mouse, Keyboard



Signals and Pinout

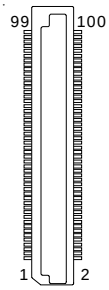
Pin	Signal	Pin	Signal
1	GND	2	GND
3	RED	4	BLUE
5	HSYNC	6	GREEN
7	VSYNC	8	DDC2B_CLK
9	PAL_DETECT#	10	DDC2B_DAT
11	LCDDO16	12	LCDDO18
13	LCDDO17	14	LCDDO19
15	GND	16	GND
17	LCDDO13	18	LCDDO15
19	LCDDO12	20	LCDDO14
21	GND	22	GND
23	LCDDO8	24	LCDDO11
25	LCDDO9	26	LCDDO10
27	GND	28	GND
29	LCDDO4	30	LCDDO7
31	LCDDO5	32	LCDDO6
33	GND	34	GND
35	LCDDO1	36	LCDDO3
37	LCDDO0	38	LCDDO2
39	VCC	40	VCC
41	JILI_DAT	42	FLM
43	JILI_CLK	44	BLON#
45	BIASON	46	PLPWR_EN
47	TV_COMP	48	TV_Y
49	TV_SYNC	50	TV_C

Pin	Signal	Pin	Signal
51	LPT/FLPY#	52	RESERVED
53	VCC	54	GND
55	STB#	56	AFD#
57	RESERVED	58	PD7
59	IRRX	60	ERR#
61	IRTX	62	PD6
63	RXD2	64	INIT#
65	GND	66	GND
67	RTS2#	68	PD5
69	DTR2#	70	SLIN#
71	DCD2#	72	PD4
73	DSR2#	74	PD3
75	CTS2#	76	PD2
77	TXD2	78	PD1
79	RI2#	80	PD0
81	VCC	82	VCC
83	RXD1	84	ACK#
85	RTS1#	86	BUSY#
87	DTR1#	88	PE
89	DCD1#	90	SLCT#
91	DSR1#	92	MSCLK
93	CTS1#	94	MSDAT
95	TXD1	96	KBCLK
97	RI1#	98	KBDAT
99	GND	100	GND

(1) These pins are not connected.

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6.6 X4 Connector: IDE1, IDE2, Ethernet, Miscellaneous



Signals and Pinout

Pin	Signal	Pin	Signal
1	GND	2	GND
3	5V_SB	4	PWGIN
5	PS_ON	6	SPEAKER
7	PWRBTN#	8	BATT
9	KBINH	10	LILED
11	RSMRST#	12	ACTLED
13	ROMKBCS#(1)	14	SPDLED
15	EXT_PRG(1)	16	I2CLK
17	VCC	18	VCC
19	OVCR#	20	GPCS#(1)
21	EXTSMI#	22	I2DAT
23	SMBCLK	24	SMBDATA
25	SIDE_CS3#	26	SMBALRT#
27	SIDE_CS1#	28	DASP_S(1)
29	SIDE_A2	30	PIDE_CS3#
31	SIDE_A0	32	PIDE_CS1#
33	GND	34	GND
35	PDIAG_S	36	PIDE_A2
37	SIDE_A1	38	PIDE_A0
39	SIDE_INTRQ	40	PIDE_A1
41	BATLOW#	42	GPE1#(2)
43	SIDE_ACK#	44	PIDE_INTRQ
45	SIORDY	46	PIDE_ACK#
47	SIDE_IOR#	48	PIORDY
49	VCC	50	VCC

Pin	Signal	Pin	Signal
51	SIDE_IOW#	52	PIDE_IOR#
53	SIDE_DRQ	54	PIDE_IOW#
55	SIDE_D15	56	PIDE_DRQ
57	SIDE_D0	58	PIDE_D15
59	SIDE_D14	60	PIDE_D0
61	SIDE_D1	62	PIDE_D14
63	SIDE_D13	64	PIDE_D1
65	GND	66	GND
67	SIDE_D2	68	PIDE_D13
69	SIDE_D12	70	PIDE_D2
71	SIDE_D3	72	PIDE_D12
73	SIDE_D11	74	PIDE_D3
75	SIDE_D4	76	PIDE_D11
77	SIDE_D10	78	PIDE_D4
79	SIDE_D5	80	PIDE_D10
81	VCC	82	VCC
83	SIDE_D9	84	PIDE_D5
85	SIDE_D6	86	PIDE_D9
87	SIDE_D8	88	PIDE_D6
89	GPE2#(3)	90	CBLID_P#
91	RXD-	92	PIDE_D8
93	RXD+	94	SIDE_D7
95	TXD-	96	PIDE_D7
97	TXD+	98	HDRST#
99	GND	100	GND

(1) These pins are not connected.

(2) GPE1# is for case open detection.

(3) GPE2# is for system wake-up.

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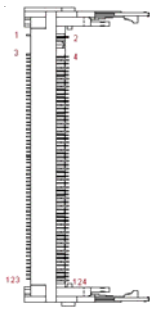
6.7 PCI and ISA Slots

PCI Interrupt Table

OnboardDevice	Pin INTA#	Pin INTB#	Pin INTC#	Pin INTD#	IDSEL
PCI Slot 1	X1_INTAJ	X1_INTDJ	X1_INTCJ	X1_INTBJ	AD19
PCI Slot 2	X1_INTBJ	X1_INTAJ	X1_INTDJ	X1_INTCJ	AD20
PCI Slot 3	X1_INTCJ	X1_INTBJ	X1_INTAJ	X1_INTDJ	AD21
PCI Slot 4	X1_INTDJ	X1_INTCJ	X1_INTBJ	X1_INTAJ	AD22
Mini-PCI Slot	X1_INTAJ			X1_INTDJ	AD22

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CN2: 32-bit Mini PCI Connector

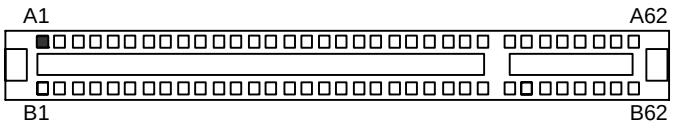


Pin	Signal	Pin	Signal
1	NC	2	NC
3	NC	4	NC
5	NC	6	NC
7	NC	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	INTA#	18	+5V
19	+3.3V	20	INTD#
21	NC	22	NC
23	GND	24	+3.3V_SB
25	PCICLK	26	RST#
27	GND	28	+3.3V
29	REQ#	30	GNT#
31	+3.3V	32	GND
33	AD31	34	PME#
35	AD29	36	NC
37	GND	38	AD30
39	AD27	40	+3.3V
41	AD25	42	AD28
43	NC	44	AD26
45	CBE3#	46	AD24
47	AD23	48	IDSEL
49	GND	50	GND
51	AD21	52	AD22
53	AD19	54	AD20
55	GND	56	PAR
57	AD17	58	AD18
59	CBE2#	60	AD16
61	IRDY#	62	GND

Pin	Signal	Pin	Signal
63	+3.3V	64	FRAME#
65	NC	66	TRDY#
67	SERR#	68	STOP#
69	GND	70	+3.3V
71	PERR#	72	DEVSEL#
73	CBE1#	74	GND
75	AD14	76	AD15
77	GND	78	AD13
79	AD12	80	AD11
81	AD10	82	GND
83	GND	84	AD9
85	AD8	86	CBE0#
87	AD7	88	+3.3V
89	+3.3V	90	AD6
91	AD5	92	AD4
93	NC	94	AD2
95	AD3	96	AD0
97	+5V	98	NC
99	AD1	100	NC
101	GND	102	GND
103	NC	104	GND
105	NC	106	NC
107	NC	108	NC
109	NC	110	NC
111	NC	112	NC
113	NC	114	GND
115	NC	116	NC
117	NC	118	NC
119	NC	120	NC
121	NC	122	MPCIACT#
123	+5V_A	124	+3.3V_SB

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PCI1: 32-bit PCI slot (INTA#)
PCI2: 32-bit PCI slot (INTB#)
PCI3: 32-bit PCI slot (INTC#)
PCI4: 32-bit PCI slot (INTD# shared with CN2)

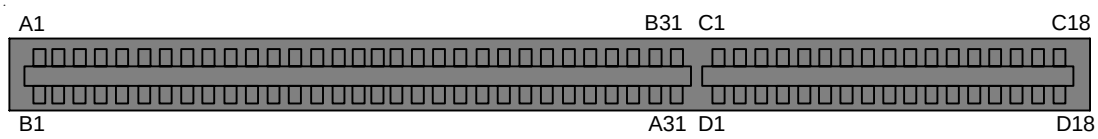


A	Signal	B	Signal
1	TRST_L	1	-12V
2	+12V	2	TCK
3	TMS	3	Ground
4	TDI	4	TDO
5	+5V	5	+5V
6	INTA_L	6	+5V
7	INTC_L	7	INTB_L
8	+5V	8	INTD_L
9	Reserved	9	PRSNT1_L
10	+5V	10	Reserved
11	Reserved	11	PRSNT2_L
12	Ground	12	Ground
13	Ground	13	Ground
14	Reserved	14	Reserved
15	RST_L	15	Ground
16	+5V	16	CLK
17	GNT_L	17	Ground
18	Ground	18	REQ_L
19	Reserved	19	+5V
20	AD[30]	20	AD[31]
21	+3.3V	21	AD[29]
22	AD[28]	22	Ground
23	AD[26]	23	AD[27]
24	Ground	24	AD[25]
25	AD[24] +3.3V	25	+3.3V
26	IDSEL	26	C/BE[3]_L
27	+3.3V	27	AD[23]
28	AD[22]	28	Ground
29	AD[20]	29	AD[21]
30	Ground	30	AD[19]
31	AD[18]	31	+3.3V

A	Signal	B	Signal
32	AD[16]	32	AD[17]
33	+3.3V	33	C/BE[2]_L
34	FRAME_L	34	Ground
35	Ground	35	IRDY_L
36	TRDY_L	36	+3.3V
37	Ground	37	DEVSEL_L
38	STOP_L	38	Ground
39	+3.3V	39	LOCK_L
40	Reserved	40	PERR_L
41	Reserved	41	+3.3V
42	Ground	42	SERR_L
43	PAR	43	+3.3V
44	AD[15]	44	C/BE[1]_L
45	+3.3V	45	AD[14]
46	AD[13]	46	Ground
47	AD[11]	47	AD[12]
48	Ground	48	AD[10]
49	AD[09]	49	Ground
50	KEYWAY	50	KEYWAY
51	KEYWAY	51	KEYWAY
52	C/BE[0]_L	52	AD[08]
53	+3.3V	53	AD[07]
54	AD[06]	54	+3.3V
55	AD[04]	55	AD[05]
56	Ground	56	AD[03]
57	AD[02]	57	Ground
58	AD[00]	58	AD[01]
59	+5V	59	+5V
60	REQ64_L	60	ACK64_L
61	+5V	61	+5V
62	+5V	62	+5V

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SLA1: 8/16-bit ISA slot
SLA2: 8/16-bit ISA slot
SLA3: 8/16-bit ISA slot



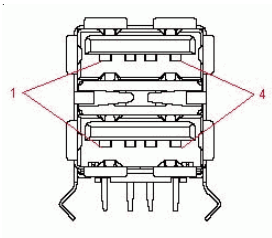
A	Signal	B	Signal
1	IOCHK#	1	GND
2	SD7	2	RSTDRV
3	SD6	3	+5V
4	SD5	4	IRQ9
5	SD4	5	+5V
6	SD3	6	DRQ2
7	SD2	7	-12V
8	SD1	8	NOWS#
9	SD0	9	+12V
10	IOCHRDY	10	GND
11	AEN	11	SMEMW#
12	SA19	12	SMEMR#
13	SA18	13	IOW#
14	SA17	14	IOR#
15	SA16	15	DACK#3
16	SA15	16	DRQ3
17	SA14	17	DACK#1
18	SA13	18	DRQ1
19	SA12	19	REFSH#
20	SA11	20	SYSCLK
21	SA10	21	IRQ7
22	SA9	22	IRQ6
23	SA8	23	IRQ5
24	SA7	24	IRQ4
25	SA6	25	IRQ3
26	SA5	26	DACK#2
27	SA4	27	TC
28	SA3	28	BALE
29	SA2	29	+5V
30	SA1	30	OSC
31	SA0	31	GND

C	Signal	D	Signal
1	SBHE#	1	MCS16#
2	LA23	2	IOCS#
3	LA22	3	IRQ10
4	LA21	4	IRQ11
5	LA20	5	IRQ12
6	SA19	6	IRQ14
7	SA18	7	IRQ15
8	SA17	8	DACK#0
9	MEMR#	9	DRQ0
10	MEMW#	10	DACK#5
11	SD8	11	DRQ5
12	SD9	12	DACK#6
13	SD10	13	DRQ6
14	SD11	14	DACK#7
15	SD12	15	DRQ7
16	SD13	16	+5V
17	SD14	17	MASTER#
18	SD15	18	GND

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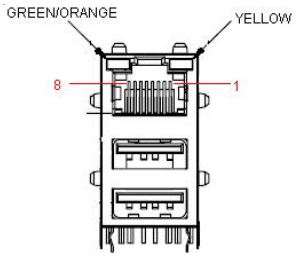
6.8 USB and LAN

CN3: USB Connector

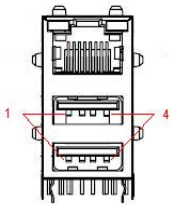


Pin	Signal
1	VCC
2	USB-
3	USB+
4	Ground

CN4: RJ-45 LAN + USB



Pin	Signal	Function
1	TXDP	Transmit Data(+)
2	TXDN	Transmit Data(-)
3	RXDP	Receive Data(+)
4	LANCT1	Termination
5	LANCT2	Termination
6	RXDN	Receive Data(-)
7	LANCT3	Termination
8	LANCT4	Termination



Pin	Signal
1	VCC
2	USB-
3	USB+
4	Ground

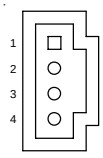
6.9 Audio

PH1: Audio



Color	Signal
PINK	MIC IN
BLUE	LINE IN
GREEN	LINE OUT

CN5: Audio CD-in



Color	Signal
1	LINR
2	AGND
3	AGND
4	LINL

CN6: Audio Amplifier

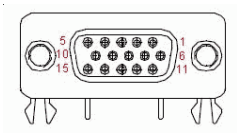


Color	Signal
BLACK	Audio Out

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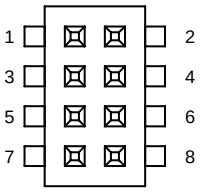
6.10 Video

CN7: VGA CRT



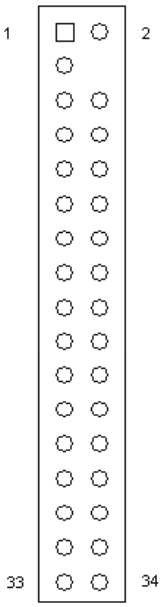
Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	VCC pull-up
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	VCC pull-up	12	DDC2B Data
13	HSYNC	14	Vsync
15	DDC2B clock		

CN8: TV-out



Pin	Signal	Pin	Signal
1	Y	2	GND
3	C	4	GND
5	COMP	6	GND
7	SYNC	8	GND

CNY4: LVDS



Pin	Signal	Pin	Signal
1	LVDS_I2C_DAT	2	LVDS_I2C_CK
3	N.C	4	N.C
5	GND	6	LVDS_A0-
7	LVDS_A0+	8	LVDS_VDD_EN
9	LVDS_A1-	10	LVDS_A1+
11	LVDS_BKLT_EN	12	LVDS_A2+
13	LVDS_A2-	14	N.C
15	LVDS_A_CK-	16	LVDS_A_CK+
17	N.C	18	LVDS_A3+
19	LVDS_A3-	20	GND
21	LVDS_B0-	22	LVDS_B0+
23	GND	24	LVDS_B1-
25	LVDS_B1+	26	GND
27	LVDS_B2-	28	LVDS_B2+
29	GND	30	LVDS_B_CK+
31	LVDS_B_CK-	32	N.C
33	LVDS_B3+	34	LVDS_B3-

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6.11 I²C and SMBus

CN10: I²C bus



Pin	Signal
1	+5V
2	I2C_DATA
3	I2C_CLK
4	GND

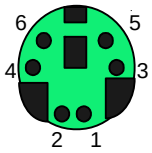
CN11: SMBus



Pin	Signal
1	+5V
2	SMB_DATA
3	SMB_CLK
4	GND

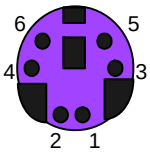
6.12 Keyboard & Mouse

CN12: Mouse (top)



Pin	Signal
1	MSDAT
2	NC
3	GND
4	KB5V
5	MSCLK
6	NC

Keyboard (bottom)

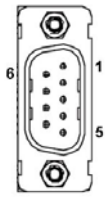


Pin	Signal
1	KBDAT
2	NC
3	GND
4	KB5V
5	KBCLK
6	NC

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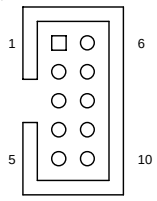
6.13 Serial and IrDA

CN13: COM1



Pin	Signal	Pin	Signal
6	DSR	1	DCD
7	RTS	2	RXD
8	CTS	3	TXD
9	RI	4	DTR
		5	GND

CN14: COM2
CN25: COM3
CN26: COM4

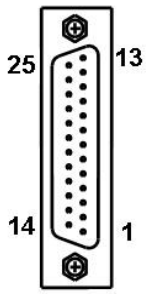


Pin	Signal	Pin	Signal
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND	10	NC

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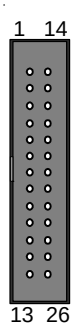
6.14 Parallel Ports

CN15: LPT1



Pin	Signal	Pin	Signal
1	STROBE-	14	AUTO FEED-
2	DATA0	15	ERROR-
3	DATA1	16	INITIALIZE-
4	DATA2	17	SELECT INPUT-
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACKNOWLEDGE-	23	GND
11	BUSY	24	GND
12	PAPER EMPTY	25	GND
13	SELECT+	26	N/C

CN27: LPT2



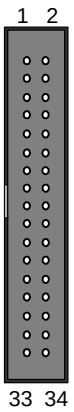
Pin	Signal	Pin	Signal
1	STROBE-	14	AUTO FEED-
2	DATA0	15	ERROR-
3	DATA1	16	INITIALIZE-
4	DATA2	17	SELECT INPUT-
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACKNOWLEDGE-	23	GND
11	BUSY	24	GND
12	PAPER EMPTY	25	GND
13	SELECT+	26	N/C

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6.15 Storage Devices

CN16: FDD / LPT

To configure to FDD or LPT Mode, see JP5 settings on p. 31.



FDD Mode

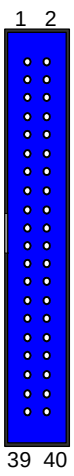
Pin	Signal	Pin	Signal
1	Ground	2	Driver density selection
3	Ground	4	N.C.
5	Ground	6	N.C.
7	Ground	8	Index
9	Ground	10	N.C.
11	Ground	12	Driver select 1
13	Ground	14	N.C.
15	Ground	16	Motor enable 1
17	Ground	18	Direction
19	Ground	20	Step
21	Ground	22	Write data
23	Ground	24	Write gate
25	Ground	26	Track 00
27	Ground	28	Write protect
29	Ground	30	Read data
31	Ground	32	Side 1 select
33	Ground	34	Diskette change

LPT Mode

Pin	Signal	Pin	Signal
1	Ground	2	AUTO FEED-
3	Ground	4	N.C.
5	Ground	6	N.C.
7	Ground	8	DATA 0
9	Ground	10	N.C.
11	Ground	12	ACKNOWLEDGE-
13	Ground	14	N.C.
15	Ground	16	BUSY
17	Ground	18	INITIALIZE-
19	Ground	20	SELECT INPUT -
21	Ground	22	PAPER EMPTY
23	Ground	24	SELECT +
25	Ground	26	DATA 1
27	Ground	28	DATA 2
29	Ground	30	DATA 3
31	Ground	32	ERROR -
33	Ground	34	DATA 4

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CN17: IDE0
CN19: IDE1

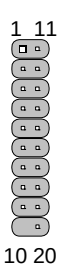


Pin	Signal	Pin	Signal
1	Reset IDE	2	GND
3	IDE Data 7	4	IDE Data 8
5	IDE Data 6	6	IDE Data 9
7	IDE Data 5	8	IDE Data 10
9	IDE Data 4	10	IDE Data 11
11	IDE Data 3	12	IDE Data 12
13	IDE Data 2	14	IDE Data 13
15	IDE Data 1	16	IDE Data 14
17	IDE Data 0	18	IDE Data 15
19	Ground	20	KEY
21	DREQ0	22	GND
23	IDEIOW#	24	GND
25	IDEIOR#	26	GND
27	IDEIORDY	28	CBSEL
29	DACK0#	30	GND
31	IDEIRQ14	32	NC
33	IDE Address 1	34	PDIAG#
35	IDE Address 0	36	IDE Address 2
37	IDE Chip select 1#	38	IDE Chip select 3#
39	IDE activity	40	GND

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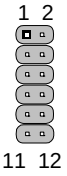
6.16 Pin Headers

CN21: Miscellaneous Connector



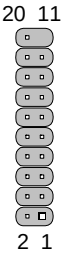
Pin	Signal	Pin	Signal
1	Power LED	11	Speaker
2	Power LED	12	Speaker
3	Power LED	13	Speaker
4	Keyboard Lock	14	Speaker
5	Keyboard Lock	15	RESET
6	NC	16	RESET
7	NC	17	HDD LED
8	NC	18	HDD LED
9	NC	19	Power Button
10	NC	20	Power Button

CN22: X4 Extension Header



Pin	Signal	Pin	Signal
1	+5V	7	X4_RSMRSTJ
2	X4_GPE1J	8	X4_EXTSMI
3	X4_SMBLARTJ	9	X1_SERIRQ
4	X4_GPE2J	10	X4_GPCSJ
5	BATLOWJ	11	GND
6	ROMKBCSJ	12	X4_EXTPRG

CN29: GPIO Header

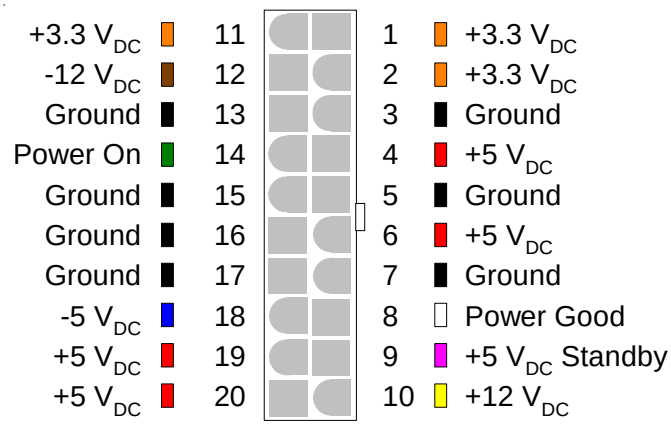


Pin	Signal	Pin	Signal
1	GPIO01	2	GPIO11
3	GPIO02	4	GPIO12
5	GPIO03	6	GPIO13
7	GPIO04	8	GPIO14
9	GPIO05	10	GPIO15
11	GPIO06	12	GPIO16
13	GPIO07	14	GPIO17
15	GPIO08	16	GPIO18
17	GPIO09	18	GPIO19
19	GPIO10	20	GPIO20

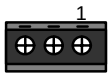
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6.17 Power Connectors

CN23: ATX Power Connector



AT Power Connectors



CNY1

Pin	Signal
1	GND
2	-
3	P12V

CNY2

Pin	Signal
1	5VCC
2	5VCC
3	5VCC

CNY3

Pin	Signal
1	GND
2	GND
3	GND

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6.18 Jumper Settings

JP1: LAN Termination



Combination	Signal
1-2	Power decouple
2-3	GND decouple

JP5: Printer/Floppy Mode



Combination	Signal
1-2	Printer enabled
2-3	Floppy enabled

JP6: Reserved

JP8: Clear CMOS



Combination	Signal
1-2	Normal
2-3	Clear

JPX1: Enable Buzzer



Combination	Signal
1-2	Enable
2-3	Normal

JPX2: Enable Backlight



Combination	Signal
1-2	Convert
2-3	Normal

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I2C/SMBus Buffers

These buffers settings are for isolation of the I2C and SMBus - test feature only.
On: I2C/SMBus passes through LTC4300A-2 Buffer
Off: Bypass Buffer

JPX3: I2C Buffer (Data)



Combination	Signal
1-2	On
2-3	Off

JPX4: I2C Buffer (Clock)



Combination	Signal
1-2	On
2-3	Off

JPX5: SMBus Buffer (Data)



Combination	Signal
1-2	On
2-3	Off

JPX6: SMBus Buffer (Clock)



Combination	Signal
1-2	On
2-3	Off

JPY1: Power Supply Mode



Combination	Signal
1-2	ATX Mode
2-3	AT Mode

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Important Safety Instructions

For user safety, please read and follow all instructions, warnings, cautions, and notes marked in this manual and on the associated equipment before handling/operating the equipment.

- Read these safety instructions carefully.
- Keep this user's manual for future reference.
- Read the specifications section of this manual for detailed information on the operating environment of this equipment.
- When installing/mounting or uninstalling/removing equipment:

  - Turn off power and unplug any power cords/cables.

- To avoid electrical shock and/or damage to equipment:

  - Keep equipment away from water or liquid sources;
  - Keep equipment away from high heat or high humidity;
  - Keep equipment properly ventilated (do not block or cover ventilation openings);
  - Make sure to use recommended voltage and power source settings;
  - Always install and operate equipment near an easily accessible electrical socket-outlet;
  - Secure the power cord (do not place any object on/over the power cord);
  - Only install/attach and operate equipment on stable surfaces and/or recommended mountings; and,
  - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.

- Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.
- A Lithium-type battery may be provided for uninterrupted, backup or emergency power.



Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

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- Equipment must be serviced by authorized technicians when:

  - The power cord or plug is damaged;
  - Liquid has penetrated the equipment;
  - It has been exposed to high humidity/moisture;
  - It is not functioning or does not function according to the user's manual;
  - It has been dropped and/or damaged; and/or,
  - It has an obvious sign of breakage.

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Getting Service

Contact us should you require any service or assistance.

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